TIE-0250x concurrency voluntary project
Synchronising code, spring 2018

2018-03-9: published

This document contains description for one project, remember also to read the general information about the course projects.

1. Problem description

The main points in this project are:

- Create a program which has several threads working together
- Document your concurrency design and implementation

2. Railroad simulation

Create an implementation for a system which you designed in project 1.

Return your design document also as part of this projetc. You can change your design, but in that case MARK CLEARLY in the document what has been changed and why.

Boundary conditions

Boundary conditions are the same as in the project 1, AND also make sure that you include these:

- Implementation is C++ (no Qt threads etc.)
- If you need a thread safe queue or some kind of messaging system, you **CAN** use an external C++ library for it. However these must hold:
  - The library must be in source code format (C++)
  - Library code must be part of your submission and clearly marked as external (e.g. in subdirectory)
  - The Library must compile with the rest of your code (no separate compilation phase and it must work in linux-desktop.cc.tut.fi)
  - Course does not provide any library suggestions - finding and evaluating one is part of the exercise.
- Main point is the concurrent programming. Your program should somehow tell what it is doing, but debug printouts are enough. (If you implement graphics etc. they are not considered in the project grading).
- REMEMBER to write clear documentation and documented code. We suggest an implementation document, which tells the overall structure of the program and how the concurrency issues are implemented (and thread safety and liveness solved).

Submission

IF you create this voluntary project with the **exactly** same group as the mandatory parts, THEN you can save the code in the same gitlab repository and make the submission with the same group.

IF someone in your group does not want to do the voluntary project, THEN contact the course staff (rinn@tut.fi) with the new group information and we will provide a new gitlab repository for this project.

3. Problems?

Send any questions about the project to the course email: rinn@tut.fi